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THE MENTOR

THE DEER FAMILY

By
DR. WILLIAM T. HORNADAY

DEPARTMENT OF NATURAL HISTORY

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THEODORE ROOSEVELT SAID:

The most striking and melancholy feature in connection with American big game is the rapidity with which it has vanished. When, just before the outbreak of the Revolutionary War, the rifle-bearing hunters of the backwoods first penetrated the great forests west of the Alleghenies, deer, elk, black bear, and even buffalo swarmed in what are now the states of Kentucky and Tennessee; and the country north of the Ohio was a great and almost virgin hunting-ground. From that day to this the shrinkage has gone on, only partially checked here and there, and never arrested as a whole.

In the early eighties there were still great regions where every species of game that had ever been known within historic times on our continent was to be found as plentiful as ever. In the early nineties there were large regions in which this was true of all game except the buffalo; for instance, the elk in portions of northwestern Wyoming, of the blacktail in northwestern Colorado, of the whitetail here and there in the Indian territory, and of the antelope in parts of New Mexico. Even at the present day there are smaller, but still considerable, regions where these four animals are found in great abundance.

In New England and New York, as well as New Brunswick and Nova Scotia, the white-tail deer is more plentiful than it was a generation ago, and, in Maine, the moose and caribou have, on the whole, increased during the same period.

Nevertheless, if we are a sensible people, we will make it our business to see that the process of extinction is arrested. Every believer in manliness, and therefore in manly sport, and every lover of nature, every man who appreciates the majesty and beauty of the wilderness and of wild life, should strike hands with the far-sighted men who wish to preserve our material resources in the effort to keep our forest and our game beasts from wanton destruction.

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THE DEER FAMILY

By DR. WILLIAM T. HORNADAY

Director of New York Zoological Park, and author of "American Natural History," "Our Vanishing Wild Life," "Two Years in the Jungle," etc.

MENTOR GRAVURES

CARIBOU OF THE NORTHWEST AND ALASKA

ALASKAN MOOSE

ALTAI WAPITI (ELK)

RED DEER

MENTOR GRAVURES

AXIS OR INDIAN SPOTTED DEER

INDIAN SAMBAR

KASHMIR STAG, OR HANGUL DEER

EDITORIAL NOTE—The pictures in this number are reproduced through the courtesy of and by arrangement with the New York Zoological Society.

THE ibexes, sheep and goats of the world have made bold mountain climbers out of soft men, the deer of the world have made keen woodsmen and trackers. More white men have been deer hunters than mountaineers. The pursuit of the big game of the world did more to create high-class rifles and promote good rifle-shooting than had been accomplished by any other cause prior to 1914.

Of all big game, that of the plains goes first, the game of the treeless mountains is next to vanish, and the deer of the dense forests is the longest to survive.

The Deer Family is a magnificent animal species, widely distributed, and of astounding physical variety. Of the whole western hemisphere there is not one state or province, from Patagonia to Point

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Barrow and North Greenland, wherein it was originally unrepresented. It covered (originally) all of the Old World save Africa, New Zealand, Australia, a few islands of the Far East, the Gobi Desert and Arabia. The Barbary Deer, of North Africa, are believed to have been colonized there.

In size and antlers, all possible grades and variations are living today, from the tiny Chilean Guemal, with little straight skewers of bone for antlers, up to the colossal 7-foot moose with antlers that are great, thick slabs of bone studded with powerful bone spears, and spreading six feet or more in the clear.

RECORD ANTLERS OF ALASKAN MOOSE
76 inches span

When the New York Zoological Society makes its final gift to the public,—of a magnificent collection of heads and horns, installed in a superb new Museum building open to all,—go to that building, open your eyes and take in, at one grand sweep of vision, the vast wall devoted to "The Deer Family." You cannot see such a sight anywhere else in the world; and unless you are already a mammalogist, I guarantee that it will impress you.

I have seen deer in many lands, and, very cheerfully, could write a volume about that thrilling Family; but I will give here only a quick, comprehensive survey of its most important members.

The Moose

In the first place, the Deer Family includes, along with the standardized round-horned deer, the flat-horned caribou and moose. It also includes the giant fallow deer of Ireland, popularly known to the English-speaking world as the "Irish Elk;" but now all dead and buried on the gravel bottoms of numerous Irish bogs. It is known by the dozens of skeletons, and skulls, and antlers that have been exhumed in fine condition and placed in museums. The Irish Elk was too ambitious. He grew antlers far too large and heavy for his body, and they led straight to his entombment in the treacherous bogs to which he went for his drinks. The first-record Irish Elk antlers have a spread of 11 *feet* 9 *inches!*

We hear so much of the giant mammals and reptiles of the past that we may be pardoned for a feeling of satisfaction in the fact that the very biggest members of the Deer Family that ever lived in this world are alive and well today. Truly the Moose "doth bestride the world like a Colossus." He is, of all deer, the unchallenged giant, and he is just as odd and picturesque as he is big.

It is difficult either to imagine him or believe him without seeing him. His towering legs are beyond compare—in deer; his huge body is

wholly out of proportion; his body is covered with long, coarse hair that is like a thatch rather than a coat of hair; his huge, overhanging nose is in a class by itself, and his enormous shovel antlers are like no other antlers under the sun. His picture, by Carl Rungius, the great animal painter, must tell the story of his form.

HEAD OF ALASKAN MOOSE

And yet, the way in which this marvel of animal creation is being slaughtered and *wasted* in Alaska, is astounding. If you protest, however, about the senseless slaughter of Alaskan big game, you are liable to be called hard names by some men—as I have been this very month.

Caribou

The most numerous of all deer, in herd numbers, are the Barren-Ground Caribou of northern Canada and Alaska. Herds containing, actually, millions of animals have been seen and described by Warburton Pike, J. B. Tyrrell and "Buffalo" Jones. They occupy the treeless regions of North America, and, formerly, the herds stretched clear across the continent from Labrador to the mouth of the Yukon in western Alaska.

In one sense the caribou are like wild reindeer; and this relationship constitutes their most brief and comprehensive description. There are eight or nine species, some quite small, but some of those of western North America are big husky animals, as large as European red deer. Two of them have been named in honor of Mr. Madison Grant and Professor Henry Fairfield Osborn, founders of the New York Zoological Society. Alaska has a fine assortment of the big species, and to the people of Alaska they are a very valuable food supply. Obviously they should be made to last as such until the herds of domesticated reindeer take their place.

ANTLERS OF ALASKAN MOOSE

Woodland Caribou are even yet to be found by hunters in Newfoundland, Nova Scotia, New Brunswick, Quebec, Ontario and Manitoba. But caribou shooting is not always to be regarded as great sport, not as good hunting goes. Where caribou are as abundant

as they are in Newfoundland, shooting them is too tame to be called real sport, and one experience usually is quite enough.

Round-Horned Deer

The group of Round-Horned Deer contains the standardized deer of the world, and, in number of species, it far outnumbers the Flat-Horned group. Perhaps the most celebrated of all its members is the American Elk, or Wapiti (wap-it-tee.)

The Round-Horned deer are at home throughout the temperate zone, the tropics of all America, and the tropics of all of the Old World, save Africa and the most southeasterly islands of Australasia. In the temperate zone they inhabit the great hardwood forests of eastern North America, the edges of the great plains, the foothills, the mountains both east and west, and the dark and tangled forest of the Pacific coast, up to southern Alaska. The forests of India literally teem with deer, both small and great.

YOUNG MOOSE

The American Elk, or Wapiti, is the King of the Round-Horned Deer, —and for that matter of the whole Deer Family. He is the most stately, the largest of all the typical deer, and the largest of all save only the moose. His antlers fittingly crown a noble personality. The efforts now being made by the Government (and a few States) to preserve the remaining herds of this grand species are well spent; but the task is very difficult and perplexing. For the Yellowstone Park herd of 30,000 head, more winter ranges, exclusively reserved for the elk herds, are absolutely necessary, and must be provided at once.

The Elk quickly responds to protection. Its return in "thousands" to the Elk River Game Preserve in southeastern British Columbia, by breeding since 1907, is a wonderful object lesson. In Jackson Hole, Wyoming, wild elk wintering there are as tame as plains cattle. The creation by President Theodore Roosevelt, practically as his last official act, of the Mount Olympus National Monument Reserve in Washington has saved to that State a splendid group of wild elk, of which the State now is justly proud.

The strangest fact about the American Elk is that in central Asia, 7,000 miles away and with no bridge between, lives the Altai Elk (or Wapiti) which is so exact a counterpart of our American animal that if a dozen specimens of each were mixed together no one but a trained zoologist could

ANTLERS OF KANAI, ALASKA CARIBOU

pick out the two species and separate them.

The long, massive and nobly-proportioned antlers of the American and Altai Wapiti mark these species anywhere, but they are so large that very few private houses can accommodate them with exhibition space.

White and Black-Tailed Deer

A whole volume might be written about the American White-Tailed or Virginia Deer and its relatives, and the part they have played in the settlement and development of the United States. The New York Zoological Society has commissioned Carl Rungius to execute an important painting, to be entitled "The Mainstay of the Pioneer," to commemorate this animal and its historic work as a nation-builder.

There is a great line of White-Tailed Deer species, a dozen or more, that extends from southern Canada, New England, and eastern Oregon to Florida, Texas, Mexico, Central America, and on through Columbia and Venezuela to southern Brazil. Some of the Central American species are very little known, even to naturalists, and their life histories remain to be written. Some of them are of very small size. These deer will be the last hoofed and horned game to survive in the Western Hemisphere, when man and the elements finally exterminate all the land mammals of the world. This will be because these deer love the forests, and are good hiders when pursued.

The Black-Tailed Deer group is strictly North American, and is limited to the western third of central North America, from Sitka to the Island of Tiburon, Gulf of California. Its largest member is the splendid Mule Deer of the Rocky Mountain region and the Great Plains country. Its smallest is the Sitka Deer, of southern Alaska, the northern diminutive of the Columbian Black-tailed Deer of the Pacific Coast.

The Mule Deer is in great danger of extermination as a sport-giving animal. It lives in rather open country, it has fatal curiosity when hunted, and it is easily killed. It will be saved from total extinction only by the great State and National game preserves of the United States and Canada.

"FREAK" ANTLERS OF A MAINE WHITE-TAILED DEER

South American Deer

South America is poorly stocked with deer. It is not well adapted to deer development and increase. The Marsh Deer (*Blastocerus paludosis*), is a fine, large species, with long, spreading hoofs, and short horns that are very massive for their length. It inhabits the region of the Rio de la Plata; the Pampas Deer, of Patagonia, is its small and delicate understudy.

WHITE-TAILED VIRGINIA DEER
In summer coat, with new antlers in the velvet

The Guemal Deer, of Peru and Chili, is one of the smallest members of the Deer Family. It is an attractive little animal, with horns measuring only two to four inches long.

The little Brockets of Mexico and Central America are so much like Duiker Antelopes that the resemblance is remarkable. The Red Brocket of Mexico stands only 20 inches high at the shoulders, its horns are straight, spear-like spikes four inches long, and its bright brown color is the reason for its name. The Brockets rarely are found in small museums, and just about never in zoological gardens and parks. In twenty years the New York Zoological Park never has been able to secure even one living specimen.

Old World Deer

Collectively, the deer of the Old World make a fine array. As you look them over it will be seen that the outstanding species are: The Altai and Tashkent Wapiti, the Kashmir Stag, the Maral Deer, the European Red Deer, the Barasingha of India, Schomburgk's Deer of Burma; the beautiful Axis of India; the Sambar or Rusa Deer, big and little, of all southeastern Asia; the almost extinct David's Deer of China, the Sika Deer of China and Japan, and the Luzon Sambar of the Philippine Islands.

There is one climbing line of Asiatic deer species that leads right up in fairly regular progression from the least to the greatest of what we may as well call the Wapiti group. They go up as follows: Red Deer of Europe; Maral Deer of the Caucasus; the Kashmir Stag or Hangul of Kashmir; the Yarkand Stag, and Altai or Thian-Shan Wapiti. The horn architecture of all the above is very much the same, and the line of ascent is too plain to be mistaken. In practical effect, the Red Deer of Europe is merely a diminutive Wapiti, about one-third the bulk

of the two large Wapiti species.

The most interesting new fact about the European Red Deer concerns its tremendously successful introduction into New Zealand, starting from three specimens that have increased to about 10,000. This was accomplished not only with no bad effects from the inbreeding, but with a decided gain in size, antlers and general vigor. That success has been a valuable object lesson to the world, and once more it has proved true our theory (and practice) that when healthy wild animals roam free on great areas, and live naturally, the usual ill effects of inbreeding as seen among domestic animals absolutely fail to appear.

ANTLERS OF A COLORADO MULE DEER

India possesses three notable deer species, the Indian Sambar, Barasingha and Axis.

The Indian Sambar is the largest and finest member of the great Rusa group of tropical deer. When looked at carelessly, it strongly suggests an Elk, with only two tines on each antler; but when you leave him and follow down through the other members of the Rusa group (of which there are at least six or seven species) you realize that he is far from being a Wapiti of any kind.

All the Rusa deer of India and the Far East are big-bodied, coarse-haired, thinly clad, and dull brown or drab in color. Their antlers are rather straight in the beam, and the tines are few and short.

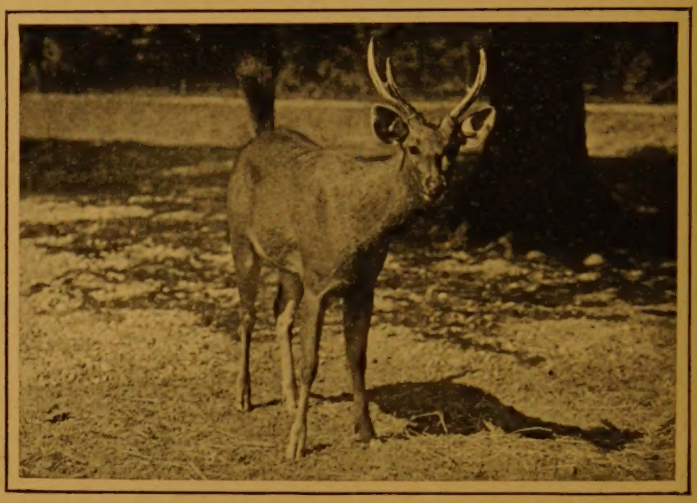
WHITE-TAILED VIRGINIA DEER
Antlers in velvet

The Malay Sambar is marked by antlers that are quite short and thick, and sometimes enormously thick for their length. No other deer is as heavy in the body, or so full of venison for its height, as the Malay Sambar.

The young of Sambar Deer generally have *no white spots*, as the young of most other deer fawns have; and, without exception, their hair is thin, stiff and bristly.

Naturally, the Rusa Deer

all love the thick forests; for were it otherwise they could not long survive. In those tropical forests their dull gray-brown coats render them the most invisible of all deer. Once on a mountainside in India my native trackers tried their utmost to make me see a Sambar lying down only fifty feet away, but I could not see it until it sprang up and ran away.



MALAY SAMBAR, OR "HORSE-TAILED" DEER

To my mind the Axis Deer of India and Ceylon is the most beautiful of all deer, and truly it is the best to keep in captivity for exhibition and breeding. It is finely formed, always beautiful in color, very handsomely marked, its antlers are as large and as long as the traffic will stand, and, in captivity, it is as good and sound physically as it is beautiful. Illness in our large Zoological park herd is practically unknown; but the fawns will persist in being born in January!

The Indian Swamp Deer, or Barasingha, is as large as our mule deer; it has antlers that are just a trifle small to match its fine size, but, in its summer coat, it is of a beautiful old-gold color that is decidedly conspicuous. In northern India it has furnished much good sport for Anglo-Indian officers, but its numbers are steadily diminishing.

MOLUCCA SAMBAR DEER

Schomburgk's Deer

Across the Bay of Bengal in Burma and Siam is found a lusty deer about the size of the Barasingha which makes up in antlers all the points and size that the latter lacks. It is known to the world by the unfortunate and utterly unsatisfactory name of "Schomburgk's Deer." The antlers are remarkable for their many forks and points and their tree-top effect.

MARAL DEER, OF THE CAUCASUS

Deer of the Far East

In the thick jungles of the Far East, from Southern India to Borneo and up to China, there is a strange group of small deer of a highly interesting character. It is known as the Muntjac. A typical male specimen is only 22 inches high, and weighs only 38 pounds. As a timid, hiding jungle-lover it has the habits of a rabbit, and as a game animal it is mighty hard to find. In Borneo I once shot one because I had remained quiet in one spot for an hour, making an elaborate sketch of an argus pheasant in a trap. The most peculiar thing about the Muntjac is its tiny antlers that are set far above the skull on two tall pedicels of solid bone that are covered with skin and hair, while they rise two or three inches above the forehead. The color of this small jungle-deer is bright fawn color, and to hungry naturalists its flesh tastes exceedingly good.

In China and Manchuria there are some very interesting deer, chiefly belonging to the Sika group, but the most interesting of them all is a "has-been." It is "Père" David's Deer,—named in honor of a Catholic missionary zoologist. It is a large one, and it is marked by the possession of a *long tail*, the longest possessed by any living deer. Its antlers are very plain and simple in form, and the longest on record are credited with a beam length of 34½ inches, with 20 points.

The startling thing about David's Deer is the fact that, in China, it now is totally extinct, and in all the world only one herd remains

MULE DEER
In early fall coat

alive to tell their tale. That herd of sole survivors lives in the park of the Duke of Bedford, at Woburn, England. There are now about 30 head, and so the future of that species hangs by that one slender thread. The question is, how long will they survive "the slings and arrows" of outrageous fortune?

BARASINGHA DEER

Fate of the Deer

What is to be the ultimate fate of the Deer Family of the world? Professor Henry Fairfield Osborn, author of "The Age of Mammals," says with grave meaning:

"We are now at the end of the age of mammals." As man breeds and increases, and sweeps on over the world with the destructiveness of a consuming fire, one by one, the Deer species of the world will disappear, until all are gone. The deer of the open plains and foothills will be the first to go, but the oncoming millions of rifles and billions of cartridges, *now fast going into the deadly hands of native hunters*, will comb them out of the jungles until none are left.

The last to go will be the deer of the tropical and subtropical jungles, and the game preserves; but, in time, the game preserves may be desecrated and raided for commercial purposes, and then even they will be destroyed.

EUROPEAN RED DEER

Taken in New Zealand from herd introduced there from England

In the course of time, as things look now, no wild land mammals or birds will remain upon the earth save rats, mice and English sparrows—and who wants them? Let us be happy, then, while we may, living in a time when we can still enjoy the company of God's noblest and most beautiful creatures.

At the same time, let us observe our solemn duties toward the remnants of wild life that, in honor, we cannot evade. It is our bounden duty to stop the killing of all female deer, and reduce the annual killing of male deer by fifty per cent. We found this earth bountifully stocked with deer, and we cannot exterminate them without becoming guilty of criminal wastefulness.

Facts About the Deer

The Deer Family is represented on all continents, and on all large islands, save Africa, Australia and New Zealand. There are about forty-five well-defined species, and many sub-species. With but one or two exceptions, the species found in the tropics and sub-tropics are scantily antlered, dull in color, and covered with coarse, thin hair.

There is but one tropical deer which is really beautiful, and that is the Axis, or Spotted Deer, of India and Ceylon. The Axis Deer is the most beautiful in color of all deer.

The American Moose is the largest member of the Deer Family. The Moose has the heaviest and most massive antlers, with the widest spread.

The American Elk, or Wapiti, is the largest and finest of all the round-horned deer.

Male deer of most species have solid antlers, of bone, branching into several tines.

Deer shed their antlers, and renew them completely, every year.

The young of nearly all round-horned deer are spotted at birth.

All adult male deer are dangerous in the mating season, when their antlers are new and perfect.

The female Caribou is the only female deer with antlers.

The best deer to keep in captivity in a park is the Fallow Deer of Europe; and, outside of its own home, the worst is the Columbian Black-Tail.

INDIAN AXIS, OR SPOTTED DEER

SUPPLEMENTARY READING

THE AMERICAN NATURAL HISTORY (Chapter VIII) *By W. T. Hornaday*

THE DEER FAMILY *By Theodore Roosevelt and others**

THE RED DEER *By R. Jefferies*

THE TRAIL OF THE SANDHILL STAG *By Ernest Thompson Seton*

THE ARCTIC PRAIRIES *By Ernest Thompson Seton*
A Canoe Journey of 2,000 Miles in Search of the Caribou

*Out of print, but may be found in libraries.

*** Information concerning the above books may be had on application to the Editor of The Mentor.

THE OPEN LETTER

A common question frequently asked by those of us interested in the life and habits of Deer is "What does 'In the Velvet' mean?" Any hunter, sportsman or naturalist can tell us, but Dr. Hornaday has such a clear, simple, interesting way of giving out information that we cannot do better than to draw on him for an answer to the question. This is what he tells us.

★ ★ ★

The unvarying, distinctive mark by which any American representative of the Deer Family can be recognized is the presence, on the male, of solid horns of bone, called "antlers," which are shed once a year, close down to the skull, and are fully renewed by rapidly growing out in a soft state called "the velvet." When fully grown, the antlers branch several times; but the first pair, which are grown during the second year, are only two straight and slender spikes, called "dag antlers." In making this statement, we include, in the Deer Family not only the true deer, but also the moose and caribou.

★ ★ ★

Many persons find it difficult to believe that the antlers of these creatures drop off close to the skull every year, and are completely renewed in about four months; but such is the fact. It is Nature's special plan to absorb the surplus strength of the males, and render them weak and inoffensive during the period in which the mothers are rearing their young, when both the does and their fawns would be defenceless against savage males with perfect antlers. It seems incredible—unless watched from week to week—that the enormous antlers of full-grown moose or elk can be dropped and completely renewed again in as short a period as four months; but it is true.

★ ★ ★

The antlers of North American deer are usually dropped in March, but, occasionally, in February. Sometimes a day or two passes between the fall of the first antler and the loss of the second. The root, or pedicle, exposed is a rough disc of bone belonging to the frontal bone of the skull. No blood flows. Dropped antlers are sometimes gnawed by rodents until destroyed; but many are picked up by those who look for them. At the end of two weeks, a rounded bunch, like a big brown tomato, has risen on the pedicle of each antler. It is soft, full of blood, and easily injured.

Gradually this elongates into the form of a thick, blunt-ended club, in color, brown or pink, shiny, and thinly covered with minute hairs. When fairly started, the antlers of a healthy and vigorous elk or caribou grow at the rate of one-third of an inch per day, or even more. They are soft, spongy, warm, full of blood, are easily injured, and if cut will bleed freely. The material of which they are composed, internally, is the same as that which forms the hair. The drain upon the animal's vitality during this period is very severe, and it is not strange that the animal is then meek and spiritless.

★ ★ ★

This is Nature's wise method of keeping the male of the species quiet and well behaved at a time critical in the life of the female and in the development of the offspring.

W. T. Hoffat

EDITOR

TWO

FROM the writer's point of view, the Caribou of North America constitute the widest big-game subject of our continent. There are seven or eight species, and they exist thickly and thinly, on arctic barrens, on plains and mountains, and in thin forests and thick forests. In size, they vary from the big Osborn Caribou of the western mountains to the little goat-like Peary Caribou of Ellesmere Land. From many great areas they have been quite exterminated, but along a few lines of least resistance they still exist, and migrate to and fro in great numbers.

Numerically they outnumber today all rival species of wild animals in North America.

In Canada, the Government has granted a charter to a company which has two objects. The first is the importation, *overland*, of a large number of domesticated reindeer from Alaska, and secondly, the rearing with them, on a basis of domestication, of large numbers of Barren Ground Caribou. The theater of these operations is the region north of Fort Churchill and south of Chesterfield Inlet, on the west side of Hudson Bay, and the final object is more food for man.

We have heard much of the need of wild game meat in Alaska, but it is a fact that Alaska now is shipping reindeer meat to the United States *for sale!*

The United States Government has established three national game preserves that contain herds of Caribou. They are the Alaska Peninsula, the Mount McKinley Game Preserve, and the Kenai Peninsula, where only a few head of Caribou remain.

When a Caribou walks, its long stride and swinging gait proclaim it a born traveler. Its shoulders are high and sharp, its head is held low, and thrust straight forward, and as it treads on hard ground, its dew-claws and hoofs click like castinets. Its head is long and cow-like, its muzzle is somewhat too large for beauty. But its eloquent, liquid, brown eyes appeal successfully against all adverse decisions on the question of its physical attractiveness.

THE EUROPEAN RED DEER

For two centuries this was the deer of European song and story. It was celebrated in prose and verse throughout Scotland, England, France, Germany and Austria, and the old masters portrayed it on canvas, often garnished by hounds and hunters.

With the disappearance of the rhinoceros and European bison, it became the leading game animal of Europe. Originally it was a more lusty animal than it is today, and some of the old horn collections of Germany and Austria contain antlers that, by their enormous size, make most Red Deer antlers of the present day seem small.

As the Red Deer were shut out of the open forests, deer conservation began in the forests of large landed proprietors. Very soon the annual killing of deer resolved itself into a strict system of limitations, in which the breeding stock was rigidly preserved. This alone has saved the Red Deer of Europe from complete extinction centuries ago. In the best deer forests of Central Europe, the standard sex proportions are four does to one buck.

In the ranges and corrals of zoological gardens, the Red Deer is a very satisfactory species, breeding strongly, maturing well, and commendably free from disease, accidents, and bad temper. In large forest tracts in America it is, as yet, an experiment. To us it seems more desirable for small fenced forests than the larger and more destructive elk, and it produces more venison per capita than the white-tailed deer, with less bad temper and danger. But there are other points to be considered, and experiments should continue.

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ALASKAN MOOSE

ONE

THE Moose is the largest of all the deer family. The ordinary specimens to be seen in zoological parks afford only a suggestion of the full grown animal. Some of the groups that have been mounted and placed in museums give us a fair idea of the full size of the Moose, but he can be appreciated in full only when he is seen alive in all his physical glory. Standing in the woods of Canada or Alaska, we find him a superb animal six or seven feet high, with legs four feet long, a neck and body covered with thick, coarse, purplish-gray hair, from three to six inches long, and a magnificent head, crowned with antlers that spread from five to six feet in width. To see this majestic monarch of the forest striding along with indifferent ease over tree trunks and stones which man must reckon with slowly and laboriously is an inspiring sight that thrills the heart of the naturalist. The moose does not graze like the elk and other members of the deer family. It "browses"—eating bark, twigs and leaves of certain trees, and moss, and lichens. It is not to be found in the open; it loves the forest and the still waters, and it frequents small lakes and ponds in the woods, where it feeds on lily pads, stems, and bulbs. It likes to wade in the water, and is a strong swimmer.

The moose is to be found in northern Maine and Minnesota, northwestern Wyoming, Idaho, British Columbia, Yukon and Alaska.

Below Alaska the favorite hunting grounds for moose are in Maine, New Brunswick, the upper Ottawa River Country, Canada, and northwestern Manitoba.

It is one of the fixed laws of man, both civilized and savage, that, in dealing with wild animals, the largest species are the first to disappear. A great mass of succulent flesh promotes the cave-man's desire to slay and eat, and the money-getter's passion to kill and sell. Wherever the killing of moose is not strictly and sanely regulated, in *fact* as well as in name, there the Moose is certain to become extinct at a comparatively early date.

Of all the North American States and provinces, I think that New Brunswick has been most successful in preserving the moose on a continuing basis, and, at the same time, in giving good Moose hunting at a reasonable price. The licensed hunter may kill one male moose per year, no more; and he must bring out the meat and utilize it. In Alaska the bag limit is two moose per man.

Today the southernmost holding-ground of the moose, still living wild and breeding, is in the southwestern corner of the Yellowstone National Park.

The United States Government has made four national game preserves that contain moose. They are the Yellowstone Park, Glacier Park, the Kenai Peninsula and the Mount McKinley Game Preserve. Several of the Provinces of Canada also have game preserves and parks that contain moose, notably the Elk River Game Preserve (B. C.), the Canadian National Park near Banff, Jasper Park, and others.

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EVERY sportsman and zoologist who sees, for the first time, the Altai and American Wapiti species in close proximity is much surprised by the twin-like resemblance between their members. It is uncanny! What would the American sportsman think if he found a fairly exact counterpart of our white-tailed deer living in Thibet? He would not know what to think!

Our American Wapiti, or Elk, goes no farther north in its range than southern British Columbia. From that region, going by land and crossing Behring Strait to the home of the Altai Wapiti, in the Altai Mountains of Central Asia, roughly estimated, the distance is about 7,000 miles or more. And between the two Wapiti species there are no connecting links whatever!

Is it not strange that one or the other of these maximum species of the genus *Cervus* did not develop differently from the other? The only difference observable, even to a practiced eye, is the slightly warmer color of the Asiatic animal.

The Altai Wapiti are numerous in captivity in southern Siberia, where their antlers are cut off in the velvet and ground up for use as medicine in China.

The Elk antlers of the widest expanse are not always handsomest. Usually, antlers that are of great length are slender, while the finest pairs are those of massive proportions, but symmetrical, and running about five feet in length. The longest pair that we have record of is 67½ inches and it has twelve points. These were taken from an animal which was killed in Colorado a number of years ago.

The hunting of the Elk is not always as fine sport as the stately character of the animal would lead a hunter to expect. It often happens that an Elk is quite lacking in suspicion, even to the point of stupidity. In such cases the attack on a herd is too much like shooting cattle. There is no excitement, and it seems like murder. The Elk is not one of the highly wrought, nervous, temperamental animals, like the deer; and when it has been surprised and startled, it is likely to hesitate in a doubtful manner for some time before it seeks safety in flight. Efforts have been made in recent years, to re-stock some of the forest lands where the Elk once was plentiful. In 1901 Hon. William C. Whitney set free 22 head of Elk in the Adirondacks —in 1902, 40 more. In 1903 five carloads of Elk—68 head in all—were sent from Mr. Whitney's game preserve near Lennox, Massachusetts, and liberated at Saranac Lake and other points in the Adirondack regions.

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THIS, the largest Deer of the Orient, next to the Altai Wapiti, was made famous by Sir Samuel Baker in his "Rifle and Hound in Ceylon." On the mountain plateau of Central Ceylon, Sir Samuel used to drive these deer with a pack of hounds, bring an animal to bay, and kill it (rather savagely) with a knife. The salient features of a full grown Indian Sambar buck are: large, beefy body; coarse hair of smoky-brown color; long and strong antlers, with only two tines on each, and a big broad, heavily thatched tail with a rounded end. The neck of an old male has a coat of long hair, which is one of the features by which to distinguish it from the *Malay Sambar*.

Sambar Deer take very kindly to captivity, breed well, and nearly always rear their young. The main difficulty is to prevent them from lunching on each other's body hair, and literally plucking each other. Fancy a sober and seemingly intelligent deer snatching, now and then, a mouthful of hair out of a corral-mate, calmly chewing it up, and swallowing it! And this when hay is only $30 per ton!

Once a droll thing happened in our Sambar herd. A certain buck was very mean to his does—so long as he had horns. He prodded them and knocked them about, and made their lives a burden to them, until his overlordship's horns fell off, at shedding time; and then the scene quickly changed.

At once the does learned that the tyrant was at their mercy—and they declined to have any! They bit him, and pawed him, and harried him to and fro until, in mercy, the deer keeper took him out and quartered him elsewhere, alone.

When I told the readers of The Mentor some time ago about various "Citizens of the Jungle," I paid tribute to the wonderful Sambar Deer. It is the largest deer of the East Indian jungles, and is much sought by sportsmen. It is about two-thirds the size of our American Elk, its antlers just escape being too small for so large an animal; and its coat is thin, coarse, harsh and unlovely. But it is a great venison-maker; it breeds and thrives in captivity, and the year-old fawn is a wonder for size. Our only difficulty in the maintenance of our herd is in taking care of the annual crop of fawns.

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FIVE

MANY deer are larger, and, in appearance, more imposing than the Axis Deer of India, but, for beauty of form and color scheme, I will back it against the field. It has no season of ugliness—as most other deer have. All the year round it is the same brilliant and immaculately dressed animal—a symphony of fawn-color, white and brown, adorned with long and graceful antlers. In size, a buck stands 36 inches at the shoulders and weighs 145 pounds.

The Axis inhabits the beautiful hill forests of the Western mountain chain of Hindustan, and also the hill forests of Ceylon. As we first saw it feeding in the open, grassy glades in the beautiful bamboo jungles of the Animallai Hills, Madras Presidency, India, it appeared to wonderful advantage. He who once sees such a picture never can forget it.

No wild deer species takes more kindly to life in *comfortable* captivity than this. Give it plenty of range space on a dry knoll, with adequate shade, red clover hay, crushed oats and a moderately heated barn in cold weather and in winter, and you will soon have a beautiful herd. Most Zoos do not give the Axis room enough in which to thrive. The history of the herd of twenty in the New York Zoological Park has been an unbroken story of success and satisfaction.

I had occasion to observe in a former number of The Mentor that the Axis, or Spotted Deer, is the most beautiful of all jungle deer—or, for that matter, of all deer, and I must repeat it with enthusiasm. Wild or tame, to see it is to admire it—and it is the most satisfactory of all deer to keep in captivity. It is good, beautiful and true; it very rarely makes trouble; it eats well, breeds well, is never sick,—and what more will you have in a deer?

Whoever has seen herds of Axis deer feeding and resting in open, lawn-like glades, and is not thrilled by the beauty of such a sight is a stoic—or something else.

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PHOTOGRAPH BY E. R. SANBORN

KASHMIR STAG, OR HANGUL DEER

SIX

THE region of high plateaus, deserts and sky-scraping mountains that stretches from the Altai Mountains to the hot plains of Central India contain a number of extra-fine species of deer. There are the Altai Wapiti and Thian Shan Wapiti, the Hangul, Bararingha, Yarkand Stag, Sambar, Axis and Muntjac, varied in character, but not one of which is to be despised.

The Kashmir Stag never was seen alive in America until, in 1910, the Duke of Bedford presented four fine specimens to the New York Zoological Society. The picture of one of these adequately tells the story of the animal's form and size.

The Hangul (Kashmir Stag) has had a narrow escape from being one of the "big deer"; for it is much too large to be called small. It stands about 52 inches high at the shoulders, and it is next in size to the big Indian Sambar. Its home is in the mountains that surround the famous Vale of Kashmir, and, in summer, it climbs the Himalayas to a height of 12,000 feet and more.

In winter the deep snows drive the herd down to the regions of the predatory native villagers, who slaughter it in the snow with the same recklessness that last winter was displayed by American Elk hunters immediately north of our Yellowstone Park. Ten years ago the annual Hangul slaughter prompted predictions of speedy extermination, and we know not what has happened since. Possibly the Maharajah of Kashmir has called a partial halt to the slaughter —we hope so. The Hangul deserves a better fate than extinction.

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THE ELK'S CALENDAR

IN THE NEW YORK ZOOLOGICAL PARK

Jan. 1. Pelage (the coat) has grown perceptibly paler.

Feb. 1. Pelage has lost its luster, and begins to look weathered.

Mar. 21. Antlers of the largest male dropped, nine hours apart.

Apr. 8. Each budding antler looks like a big brown tomato.

Apr. 18. New antlers about five inches long, thick and stumpy.

Apr. 30. Each antler has developed three branches. Young elk born, well spotted. Closely hidden in the rocks. Height, 26 inches; length, 35 inches; weight, 30½ pounds.

May 10. Shedding in full progress; the Elk look their worst.

June 1. Shedding about half finished.

June 18. Antlers now full length, but club-like, well haired. Tips flat. Large male has finished shedding.

July 20. Antlers are now sharp at their tips. Flies troublesome. Herd bathes in the pond frequently and long.

Aug. 1. Entire herd now free from winter pelage. Animals look well in short, red summer coat, but smaller. Velvet still on antlers. Spots on young are all gone, and white rump-patch is fully developed.

Aug. 15. Two big males began to rub velvet from antlers, against trees.

Aug. 22. Antlers of one bull almost clean, but velvet still hangs in tatters, like carpet rags. Tips pure white, base looks bloody.

Sept. 15. The summer coat has been completely shed.

Oct. 1. The herd is at its best. All antlers clean and perfect. Pelage long, full, and rich in color. Mating season now on. Bulls aggressive and dangerous. Fawns active and playful. The "bugle" of the bull is a shrill shriek, like an English locomotive whistle, sliding down the scale into a terrific bawl.

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